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AUTHOR Davis, Dan; Kugelmass, Judith
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ABSTRACT

The Home Instruction Program for Preschool Youngsters (HIPPY) is evaluated in this research report with respect to the effects of home environment. The main data of an original HIPPY study consisted of the children's performance in various tests of mental ability. In the present study, the same sample is used, but the focus of research is on the parents and the family structure. Tables illustrate such variables as parents' education, room-density ratios, opportunities for learning provided by the mother, and parental expectations. Data indicate that the program had some impact on mothers but, due to the highly programmed format, did not generally serve to instill in them much confidence or awareness of themselves as educators. It is concluded that although the use of very structured materials and instructions was necessary because of the low educational level of the mothers, in the future, the mothers must become more involved in the program to make it work effectively. The problem is identified as increasing the mothers' initiative in the teaching role while maintaining educational effectiveness for the child. (WI)

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HOME ENVIRONMENT: THE IMPACT OF THE HOME INSTRUCTION PROGRAM FOR PRESCHOOL YOUNGSTERS (HIPPY) ON THE MOTHER'S ROLE AS EDUCATOR

An Interim Evaluation

Dr. Dan Davis, Mrs. Judith Kugelmass

THE NCJW CENTER FOR RESEARCH IN EDUCATION OF THE DISADVANTAGED

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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INTRODUCTION

The past decade witnessed the development of two approaches to educating pre-school, disadvantaged children. First, there was the initiation and expansion of compensatory programs in formal, pre-school settings. It was felt that well thought-out curricula taught by trained professionals would stimulate cognitive and social development. However, evaluations of these programs produced disappointing results, and even in cases where immediate program effects were observed these were not maintained over an extended period (Hellmuth, 1970; Stearns, 1971). One of the explanations offered for the limited success of these intervention efforts is that changes were being effected in children that were not supported or reinforced in their "inadequate" home environments.

Attention was focused upon a second approach to early intervention which emphasised the importance of the family's role. This approach maintained that compensatory programs should involve parents and assist them in providing a more adequate educational environment for the young child. This position was based upon accumulated data and theoretical formulations concerning the influence of the home, particularly maternal factors, on the cognitive behavior of children (Hunt, 1969; Bloom, 1964; Hess and Shipman, 1968).

The past few years has thus seen a trend toward programs in which parents, usually the mothers, are actively involved. In some projects, the mother is brought into the pre-school so that she becomes involved in both the educative and decision making process (Stern, 1969; Headstart, 1968). In other programs the intervention is both in the home and in the preschool (Karnes, 1969; Gray and Klaus 1969; Radin, 1968), or only in the home (Levenstein, 1971; Micotti, 1970).

The primary objective of most of these programs is to induce a positive change in the intellectual performance of the child. A second, vital, operational goal is to effect changes in the behavior and/or attitudes of the parents so that they may support the child during intervention and help maintain effects after intervention ceases.

HIPPY

The Home Instruction Program for Preschool Youngsters (HIPPY)* is an attempt to improve the intellectual performance of disadvantaged children through a highly structured, sequential program of instruction. The program was applied under two conditions: in the first, mothers administered the material to children in the home under the guidance of non-professional aides; and in the second, professional teachers administered the material in a nursery classroom. It was hypothesised that children taught in the home would do significantly better on academic tasks and would maintain their advantage over a long period. One of the underlying assumptions for the formulation of this hypothesis was that by working together with her child the mother is involved in the creation of a supportive environment which reinforces the child's achievements. (Lombard, 1968)

Furthermore, the HIPPY investigators hypothesised several important effects upon the mother in her role as educator as a result of participation in the home instruction program:

1. "The direct experience of teaching her child could be an effective way of helping the mother to see herself as an educator, if she is successful in her new role."

2. The mother-child teaching situation provides the mother with a new framework for interaction which should be conducive to the production of a new awareness of her child's potential, the manner in which he learns and ways by which he can be stimulated to further learning."

3. "Mothers will acquire skills which will allow them to be a good deal more "self-helpful" in handling general and specific educational problems."

(Lombard, p. 5-6)

No active attempt was made within the program to induce these specific changes. They were anticipated as natural by-products of the teaching role and the interaction process with the child. The non-professional aids who went into the homes were told to reinforce the mothers' interest and encourage their involvement, but were given no specific instructions or tools with which to do this.

HIPPY AND THE HOME ENVIRONMENT STUDY

The main data of the HIPPY study were the children's performance in various tests of mental ability. At the end of each year of intervention, the children in all groups were tested and their performance compared. However, the only systematic information available on the intervention families were the basic demographic data. The HIPPY investigators had their own impressionistic observations and reports of the non-professional aides to help them assess the impact of the project upon the mothers in the home program, but they felt the need of more objective evaluation.

Another project supported by the NCJW Center for the Disadvantaged had been concerned with the relationship between home environment variables and the intellectual performance of the child (Davis and Kugelmass, 1969). In order to replicate and extend earlier findings in a new study the decision had been taken to interview mothers of five-year-old, disadvantaged children in order to assess their home, intellectual environment.

The HIPPY and Home Environment (H.E.) teams felt that the proposed replication of the Home Environment Study could be executed to the advantage of both projects by using the HIPPY sample. The H.E. study could take advantage of the battery of test data HIPPY had obtained on its children and eliminate the expensive and difficult task of testing a new sample. The HIPPY team, on the other hand, felt that the kinds of variables to be measured in the Home Environment Study would provide important background data about its families. Furthermore, some of the variables would provide comparative data between the home-instruction and non-home-instruction mothers that could serve as a first evaluation of the program's effects on the home to supplement the findings on the children's performance.

The design of the larger H.E. study included an interview for the fathers as well as the mothers. Although the fathers were not a focus of concern in the HIPPY-HE study, comments about the project were obtained from them and will be noted in the discussion of the general findings.

In the discussion that follows the home instruction group is identified as "I" while the non-home-instruction groups are identified as "C" (Control).

SAMPLE

The HIPPY-HE study was conducted after HIPPY has been in operation for two years. All the I and C children in the HIPPY sample had been randomly selected from kindergartens in the Hatikvah Quarter of Tel Aviv. The I and C samples were composed of sub-groups that had received treatment for varying periods of time: One group of I children and their mothers had received home instruction for two years, initiated when the child was 3.5 - 4.5 years old; a second group of children and mothers had been involved for one year, initiated when the child was 4.5 - 5.5 years old. The children in the C sample can be divided into three sub-groups:

1. had participated in the HIPPY-teacher-instructed program for two years,
2. had participated in the HIPPY-teacher-instructed program for one year,
3. had not participated in any HIPPY intervention (pure controls).

All of the children and their families in these three groups were regarded as controls for this study since the home was not involved in any way in the treatment.

The children and families from two kindergartens who had not participated in any way in the intervention were not included in the HIPPY-HE sample and these families served as subjects during the training period of the interviewers. An attempt was made during the data collection period to reach all of the remaining 60 I and 62 C families in the HIPPY samples. Thirteen families could not be located because of change of address and four families were rejected because they were project drop-outs. Six mothers and seven fathers were not reached; three fathers refused to participate. Three mothers were widows, three divorced.

The final sample, therefore, was composed of 52 I and 48 C mothers, 45 I and 45 C fathers. The I group consisted of 34 two-year home instruction and 18 one-year home instruction families. The C group consisted of 11 two-year teacher instruction families, 12 one-year teacher instruction and 22 no-intervention families.

The children of all these families had just completed kindergarten and were about to enter the first grade. Their ages ranged between 5.5 - 6.5 years. Thirty girls and 22 boys were in the I group and 25 girls and 23 boys in the C.

Inspection of the demographic data indicated that the I and C families were very similar in terms of parents' education, father's occupation, family size, room density ratio, ethnic background, parents' age and languages spoken at home. Table 1 presents the educational and room-density ratio distributions of both samples.

Approximately 25% of the mothers had no formal education whatsoever. The father's level is slightly higher, but 50% of both the mothers and fathers did not complete elementary school. Only 9% of the mothers and 19% of the fathers studied between 10-12 years. The fathers were unskilled (16%), semi-skilled (46%) or skilled workers (38%).

Aside from 15% of the parents born in Israel, all others were born in Afro-Asian countries with the largest percentage originating in Iran and Iraq

The mother's ages ranged between 24-50, a mean of 33; fathers' between 27-62, a mean of 39.

The number of children in the families ranged between one and nine, with a mean of 4.0. In 27% of the families the target child is the first born and 2% are only children.

None of the homes in the sample had more than three rooms. The mean number of persons living in these homes was 6 and the average number of persons to a room was 3.6.

TABLE 1

Parents' Education

Years of Education	% Mothers I (N = 52)	% Mothers C (N = 48)	% Fathers I (N = 45)	% Fathers C (N = 45)
No Education	27	25	2	11
1-4 years	13	14	20	18
4-7 years	19	19	31	18
8 years	23	29	24	20
9 years	8	5	7	9
10-11 years	8	6	14	17
12 years	2	2	2	7

Room-density Ratio

(Persons/room)

	Mean	S.D.
Intervention	3.64	1.69
Controls	3.42	2.18

INSTRUMENTATION

Data in the Home Environment Study were obtained through a focused interview. The instrument had been designed to measure what had been defined as "home intellectual press". Based upon a model developed by Wolf (1963) and Dave (1964) different processes, or sets of experiences, were identified within the home which were hypothesised to act as a "press" upon the child and are related to his intellectual performance. These sets of experiences represent ongoing, dynamic processes which describe the environment in a way which goes beyond the static descriptions obtained through indices of social class, race, etc.

The process variables selected were intellectual in nature. Although it is sometimes difficult to separate intellectual from emotional experiences in the home, process variables which might be considered more reflective of emotional-affective press were not included. In selecting the variables, an attempt was made to include experiences that had been suggested in both the theoretical and empirical literature to be of particular relevance in evaluating intellectual press in the homes of the socially disadvantaged child. Each of the process variables was operationally defined by a set of specific questions.

The Home Environment Variables were divided into two groups:

1. Performance Variables: Variables which describe the reported behavior of the parent, both generally and toward the child in question.
2. Attitude Variables: Variables which describe the stated values, aspirations, expectations of the parents.

A full list of the variables tapped in the instrument appears in Appendix A.

VARIABLE SELECTION AND HYPOTHESIS

The central question of the HIPPY-HE study was: did the HIPPY program affect the mother's role as an educator as hypothesised by the HIPPY research team .

At the inception of the study, the HE variables were reviewed and their specific relevance to the HIPPY project evaluated. The HIPPY investigators had hypothesised that through the interaction process and program treatment mothers would learn new skills and attitudes that would be transferred to more general behaviors. Differences between I and C mothers might be predicted on many of the HE variables if the notion of transfer is broadly conceived. For example, one could hypothesise that as a result of a year or two of a new, close interaction with her child the I mother's communication pattern might become more accepting or that her aspirations for the child's future education would be raised.

The Home Environment team felt that it was unrealistic to expect such far reaching changes in mothers as a result of a highly structured program that focused on teaching cognitive tasks and that did not make specific efforts to help the mothers understand the relevance of the program to a more general behavioral and attitudinal framework. It was, therefore, decided that hypotheses could not be formulated regarding most of the HE variables and that they could only be subjected to exploratory examination.

It did seem justifiable, however, to formulate hypotheses about differences between the I and C mothers on variables whose defining questions were specifically related to the content and structure of the program. Four variables met this requirement and were selected for comparisons and closer

examination. These variables address themselves to various aspects of the effects anticipated in mothers by HIPPY. The variables selected and the hypotheses formulated were:

1. Opportunities Provided for Learning by the Parents:

Home intervention mothers would report spending more time with the child and would tend to spend this time teaching the HIPPY materials.

2. Reading and Telling Stories

Home intervention mothers would report reading and looking at books with the child more often and would be more aware of his favorite stories.

3. Parent's Involvement in Formal Teaching Situations

Home intervention mothers would report being more involved as a teacher in school-related tasks. They would also tend to be more positive and resourceful about their role in being able to help the child in school.

4. Parents' Expectations for the Child's Success in First Grade

Home intervention mothers would be more optimistic about the child's success in first grade and would see the project as being partly responsible for this potential success.

PROCEDURES

The interviews were conducted during July and August, 1971. The HIPPY program was inactive during the summer and it was hoped that by interviewing during that period, the possibility of parents connecting the intervention with the HE studies could be reduced.

All interviewers had undergone a period of training and had experience with families similar to those of the sample before they went into the field.

They were told that part of the sample had participated in a university intervention program, but that this was only incidentally connected with the present study. They did not know before they went into the homes which families were participants in the I group and which were in the C group. Interviewers were instructed to record references to the University project wherever they appeared during the interview but were not asked to probe for details. Post interview discussion with the interviewers did not reveal that any biases regarding the I and C families were induced by these instructions.

Parents were not informed in advance that they would be approached. Teams of one male and one female went to the homes and told the parent present that they were students from the University who were studying "what children do at home and what parents think about certain questions in order to help schools plan better programs for children".

Each parent was interviewed separately, mothers by the female member of the team, fathers by the male - and the recording of the protocols was alternated accordingly. Questions were open ended and the interviewers were instructed to record verbatim responses. Team partners were rotated each week in order to avoid a particular team style or prejudice in the data.

Each interview took approximately one to one and a half hours.

RATING SCALES

The rating scales for the questions in the interview were built after data collection. Categories for the questions were based upon actual responses in the protocols. A random sample of 25-35% of the interviews was drawn separately for each question, responses recorded and categories defined. The

rank order of a category was determined by the extent to which the HE team felt that it reflected or could lead to stronger intellectual press. The questions in each variable were considered separately and criteria for category ranking determined in accordance with the variable definition.

The set of protocols was scored by four judges. A system of rater-protocol rotation was employed which reduced rater bias as much as possible in the family scores. The entire set of protocols was divided into two random subsets and the interview questions were also divided into random units composed of 5-10 questions each. The judges were rotated at frequent intervals so that each judge scored parts of each interview and two independent judges rated each question for every family. This procedure was followed independently for the mother and father interviews. The parents score on each question was the average of the two independent ratings. The inter rater correlations on questions were generally in the high eighties and nineties with a range of .71 to 1.00.

RESULTS AND DISCUSSION

The results are presented according to the list of variables and hypotheses presented on page 11 The response distributions in the intervention and control groups are given along with the text of each question in Tables 2 to 5. All the questions for each variable are included even if they do not relate to the specific hypotheses stated. This allows for exploratory as well as specific hypothesis testing. Differences between groups were examined by either t or x^2 statistics depending on the presence of a clear-cut scale and whether interest was focused on particular response categories.

VARIABLE 1: Opportunities for Learning Provided by the Mother (Table 2)

This variable attempts to describe the mother's involvement in and response to a wide variety of every-day situations within the home which are potential learning experiences for the child. The questions were subdivided into two categories: A) those which relate to learning opportunities in which the mother's initiative is involved; B) those which relate to the mother's response to activities which the child has initiated. The distributions on all questions in this variable are presented in Table 2.

Category A (Questions 1 to 6)

Differences between the mothers were not expected on most of the questions in Category A. As was stated in the introduction to this paper, the intervention was not designed to extend the mother's initiative to situations which were not related to the HIPPY materials - such as allowing the child to help bake or be involved in the decision making process of selecting his own clothes. Indeed, the responses of I and C mothers are very similar on these questions.

However, the primary requirement for participation in the HIPPY program was a committment from the mother either to teach or supervise the teaching of the HIPPY materials each day or several times per week. Therefore, the first and most basic difference anticipated between the I and C mothers was that more I mothers would report spending time with the child in the afternoon and that most of them would spend this time, or part of the time, teaching the HIPPY materials.

The distribution in question 1 indicates that there is a tendency for more I mothers to spend some time with her child in the afternoon and a larger percentage (19 I vs. 36 C) spend the time in what was defined as stimulating readiness activities (categories 3,4). However, the difference is not signifi-

cant (x^2 = 2.32, DF = 2) and only 20% of the I mothers reported teaching the HIPPY materials. The others referred to activities which were qualitiatively the same as those of the C mothers - reading, games, etc.

The question arises as to why more of the I mothers did not report working with the child on the HIPPY materials. Two possibilities suggest themselves: one, that the mothers were not fulfilling the project requirement; the other, that many of the project mothers may not have internalised the programs existence to the extent that they saw it as a routine and central part of their regular activities.

In addition to the fact that the reports of the aides indicated that the mothers were working with the children, the second explanation gains support from the data in question 2: "What do you do when x says that he is bored?". The solutions or suggestions made by the mothers in both groups were very similar. The nature of the responses in the category "suggests specific activity" are almost identical: "I tell him to look at a book", "I give him paper to draw". Not one project mother stated that she suggested to her child that he work on the HIPPY lessons alone or together with her.

Category B (Questions 7 to 11)

The questions in Category B measure the degree to which the mother extends learning experiences initiated in the Gan and allows the child to use common household items for play and exploration. Differences between the groups were not hypothesised on this set of questions, but inspection of the data indicated that there was a tendency for the I mothers to be more permissive. The differences between the I and C mothers was significant on item 9 (t = 1.98, DF = 98, P = .05) and in the other 4 items the direction is consistently in favor of the I mothers. This may be an indication of a developing acceptance and permissiveness towards the child as a result of project experience.

TABLE 2

VARIABLE 1: Opportunities for learning provided by the mother

Category A: Opportunities initiated by the mother

	exp. (%)	control (%)
1. What do you do together in the afternoon?		
0 - nothing; eat	16	29
1 - talk about everyday matters /where did you go, what did you do	13	10
2 - go for a walk, play games	22	23
3 - stimulating activities / read story, plays didactic games, teaches	22	19
4 - category 3 and category 1 or 2	27	17
2. Often children say "I am bored, I have nothing to do", what do you do when x says this?		
0 - he is never bored / because he is 24 hours outside, because he has many brothers	19	11
1 - sends him to play outside	14	23
2 - tells him to play with siblings; to play with toys	21	10
3 - takes him for a walk; to the seaside	13	25
4 - tells a story; teaches a,b,c; suggests a specific game or book	33	31
3. When you bake, does x help you? What do you let him do?		
0 - nothing	22	33
1 - only to watch	12	7
2 - child brings ingredients, utensils	33	25
3 - helps or simulates	31	35
4. When you wash, does x help you? What does he do?		
0 - nothing	48	36
1 - helps in some way / helps to hang or fold	51	62

	exp. (%)	control (%)
5. When you set the table, for example on Friday evening, does x help? What do you let him do?		
0 - nothing	16	19
1 - helps to bring utensils, food	69	67
2 - helps to set the table	16	14
6. When you buy him clothes, do you take him with you? Does x choose what he wants or do you choose for him?		
0 - doesn't take x along	40	34
1 - the child goes but parent chooses for him	25	24
2 - the child goes and participates in choosing his clothes	36	42
Category B: Opportunities initiated by child		
7. What do you do with the handwork and paintings he brings from kindergarten (can we see anything?)		
0 - throws away immediately	7	16
1 - says that keeps and then throws away - there is nothing in the house	30	23
2 - keeps /shows a file or a drawer with paintings	52	49
3 - hangs on the wall, puts on sideboard	11	12
8. Do you let him do things they do in kindergarten at home as well, what?		
0 - no	8	12
1 - yes - he draws	48	57
2 - yes - any activity different from drawing	43	30
9. Do you allow him sometimes to play with things you have in the house, such as: spoons, pots, old clothes, shoes, empty boxes, a blanket, things to play doctor		
0 - doesn't allow	7	9
1 - gives one of above items	7	8
2 - gives two of above items	8	18

	exp. (%)	control (%)
3 - gives three of above items	21	25
4 - gives four of above items	15	20
5 - gives five of above items	42	20

10. What would you do or say if x took a hammer and nails to build something?

0 - wouldn't allow	14	24
1 - would allow	86	76

11. What would you do if x took a needle and thread to sew something?

0 - wouldn't allow	23	37
1 - would allow	77	63

VARIABLE 2: Reading and Story Telling (Table 3)

The questions in this variable describe the reading and story-telling patterns of the families. Reading books to the child was a central and essential part of the HIPPY curriculum. Approximately 8-9 books were given to a child each year and the mother was instructed how to use the books to best advantage - i.e. how to tell the story, use the pictures, ask questions, etc. Illiterate mothers could also use the books by learning the story and exploiting the pictures rather than the text (Lombard p.19).

Therefore, it was hypothesised that I mothers would be more likely to read or look at books with her child; she would read to him more frequently, and she would be more aware of his favorite stories.

The number of I and C mothers who reported doing some reading with the child is almost identical (question 3). Also, the difference in frequency of reading or telling stories (question 5) was not significant ($t = .9$, $DF = 97$). Therefore, it cannot be concluded that the project increased the number of mothers who read or raised the frequency among those who read or tell stories.

Children who are exposed to stories and books generally have "favorites" and we can assume that parents who are aware of the child, whether they read to him, look at books or tell stories, should be able to report which stories the child likes. In spite of the greater involvement with the child and the project demands, 45% of the I mothers could not answer the question at all. Although 54% of the I mothers read or told stories once a week or more, only 29% could report a specific favorite story or stories (question 6).

It appears that the project did not influence the mother's awareness of the child's responses to stories.

TABLE 3

VARIABLE 2: Opportunities for learning provided by the mother: books and stories

	exp. (%)	control (%)
1. Do you tell him stories you know?		
0 - no	28	26
1 - used to tell in the past	15	12
2 - yes	57	61
2. When did you start telling stories?		
0 - never	35	26
1 - now: 5-6	8	11
2 - at the age of 4	21	9
3 - at the age of 3	24	29
4 - at the age of 2	12	18
5 - at the age of 1	1	7
3. Do you also read him stories?		
0 - no	29	31
1 -looks at pictures with him	20	14
2 - yes, in a foreign language	6	4
3 - yes, in Hebrew	45	51
4. When did you start reading or looking at pictures with him?		
0 - never	30	33
1 - now: age 5-6	11	13
2 - at the age of 4	23	16
3 - at the age of 3	28	24
4 - at the age of 2	7	11
5 - at the age of 1	1	2

	exp. (%)	control (%)
5. How often do you read or tell him stories?		
0 - never; in the past only	14	21
1 - once a month or less	9	5
2 - twice a month to once a week	12	7
3 - once a week	12	27
4 - more than once a week	36	26
5 - every day	18	13
6. Is there a story he likes very much?		
0 - doesn't know	45	42
1 - a general topic /stories about animals	30	24
2 - a particular story or more than one story	25	33

VARIABLE 3: Mother's Involvement in Formal Instruction (Table 4)

This variable attempts to determine whether the mother perceives that she has a role in teaching her child school related skills. In the first two questions, she was asked whether she was involved in teaching during the preschool period, and in the next two what role she will fill in helping the child in the first grade.

The HIPPY project might be defined as a program that teaches mothers to teach. HIPPY felt that mothers can and should be involved in the formal teaching process, and that the experience of teaching would help the mother see herself as an educator.

It was therefore hypothesised that more I mothers would report teaching their children school-related tasks during the preschool period and they would see a role for themselves when the child is in first grade.

Role in Preschool Teaching

At the inception of the project, the mothers were specifically told that the purpose of the program was to help them prepare the child for school. It was expected that a majority of the I mothers would report that they themselves were involved either directly or indirectly, by supervising siblings, in teaching the HIPPY materials in response to the question "Soon x will be going to school. Are you doing or have you done anything at home with him that will help him in school?"

The distribution in Question 1 indicates that no differences were obtained between the response of the I and C mothers. 43% of the I mothers said that they were doing nothing special and 38% reported actual preparation. Also only 35% of the I mothers reported teaching the HIPPY materials when asked this question.

It was suggested that one reason for the surprising result was that mothers may have described their HIPPY teaching role in previous questions and did not feel it necessary to repeat themselves. The protocols were checked and it was found that ten additional mothers had made indirect reference to their HIPPY teaching role. If these mothers are included in the calculations, we must still explain the lack of response of 50% of the I mothers.

This finding suggests that about half of the HIPPY mothers do not see themselves as an integral part of the teaching process. The lack of internalization observed in Variable 1 - "Opportunities for Learning" (Table 4, Question 1) repeats itself in this question.

In question 2 the mother was asked who had taught the child specific skills. She was given credit for teaching even if she said that someone in addition to herself was involved (siblings, aide, teachers). Although the I mothers reported teaching slightly more items on the average, the difference was not significant ($t = 1.1$, $DF = 98$).

The scores on the first and second questions were examined for each mother in the I sample in order to obtain a more complete picture. 58% of the I mothers scored relatively low on both questions: they were not involved in actual school preparation of their child and they did not teach him more than 3-4 skills.

Role in First Grade

Questions 3 and 4 are concerned with the mother's view of her ability to help her child with school-related programs. No differences were found between the groups. The fact that more I mothers did not fall in the upper category "I'll help him" is, perhaps, a reflection of realism. Many of them are not equipped with the skills necessary to help a school child and HIPPY did not

attempt to equip them with these. However, it was expected that I mothers would not feel as "helpless", that they would be more resourceful and suggest other ways that they might be able to help the child. There were no suggestions in the I protocols that differed from those in the Cs; there was no stronger tendency for them to involve siblings or to seek help from other agencies, public or private.

The HIPPY investigators had hoped that the supportive environment which they had helped the mothers create during the project would, ideally, accompany the child throughout his learning years. A prerequesite to the mother's successful involvement in the child's formal education is the confidence that she can give her child what he needs for success (Lombard, p.5).

Approximately half of the mothers in the I sample did not evidence involvement in the formal teaching process or confidence in themselves as measured by the criteria in this interview.

TABLE 4

	exp. (%)	control (%)
VARIABLE 3: Mothers' involvement in formal instruction		
1. Soon x will be going to school, have you done anything with him at home that will help him at school?		
0 - no	43	42
1 - prepared school bag, new clothes	12	11
2 - talks about the necessity of being clean or discipline	7	6
3 - actual preparation /teaches abc, arithmetic, HIPPY, supervises siblings	38	36
2. Who taught x: to hold a pencil, use scissors, sit quietly and listen, to open a book, know the names of the days, recognize colors, tell the time?		
0 - not mother	14	24
1 - mother taught one skill	19	20
2 - mother taught two skills	16	13
3 - mother taught three skills	20	18
4 - mother taught four skills	7	13
5 - mother taught five skills	12	4
6 - mother taught six skills	12	6
7 - mother taught seven skills	0	2
3. Do you feel you will be able to help x in the 1st Grade? How?		
0 - I can't help	34	29
1 - I shall take a private teacher, I shall see that brothers help	5	5
2 - I shall see that he does his homework	6	3
3 - I shall help	55	63

	exp. (%)	control (%)
4. <u>If x finds it difficult at the beginning of the 1st grade; if he doesn't learn to read very well, what will you do?</u>		
0 - I can't help	20	17
1 - I shall take a private teacher; I shall see that brothers or cousins help	24	25
2 - I shall help	53	58

VARIABLE 4: Expectations for the Child's Success in First Grade (Table 5)

This variable attempts to ascertain whether the mother thinks that the child will do well in the first grade and what it is that promotes or restricts his success.

Parents who were asked to participate in HIPPY were told that the purpose of the program was to prepare their child for school. The aides made an effort to recognize and compliment the child's achievements. Since the mothers did not have the skills necessary to independently and accurately evaluate the child's progress, it does not seem unreasonable to assume that their expectations would be influenced by the treatment.

It was hypothesised that the I mothers would have more positive expectations for their children's success in the first grade and that they would see project participation as partly responsible for that success.

The lowest categories (0, or 0 and 1) in each question are indicators of either negative or ambivalent feelings about the child's future adjustment and success in school. We note that fewer I mothers fall into these categories. However, the differences were not significant and were smaller than anticipated. For example, 47% of the I mothers did not think that the target child would do better in school than his siblings, a percentage that is equal to that obtained in the controls. The majority of mothers in both groups were optimistic, and the project did not appreciably raise the level of expectation of the mothers in the I group.

The second part of the hypothesis which predicted that the mothers would report project participation as the factor responsible for success also was not confirmed. Only 27% of the I mothers over the five questions referred specicically to the project on this variable.

However, an interesting pattern of reasons for success emerged which might, indirectly, reflect the project's influence. A larger percentage of C mothers emphasised the importance of what were defined as social-emotional characteristics, while the I mothers tended to refer to motivational and competence skills and in some questions to intellectual ability as well. For example, in the first question, 28% of the C mothers vs. 10% of the I mothers refer to the social-emotional characteristics, 16% C vs. 30 I to motivational and competency skills, and 16% C vs 33 I to cognitive abilities. This pattern is consistent throughout the variable.

I mothers may have learned to look at their children in new, different terms as a result of the project experience.

TABLE 5

VARIABLE 4: Expectations for the child's success in 1st grade

	exp. (%)	control (%)
1. From all you have just said about x, what do you think will help him in school?		
0 - can't make judgement	14	26
1 - social-emotional traits relevant to school / quiet, obedient, friendly	30	16
2 - writes, reads, want to go to school	10	28
3 - intellectual trait / good memory, understands	25	9
4 - more than one intellectual trait	8	7
5 - categories 1 and 3 or 4	7	9
6 - categories 2 and 3 or 4	7	5
2. What will disturb him at school?		
0 - can't make judgement	12	19
1 - intellectual limitations / learning problems	2	10
2 - social emotional traits / nervous, sensitive	46	43
3 - nothing will disturb him (with a reason)	40	28
3 Do you think he'll find it difficult to get used to school? For as you know school is different from kindergarten; why do you think so?		
0 - he will find it difficult	8	8
1 - can't make judgement	14	12
2 - initial adjustment difficult / difficult at first	13	21
3 - no - he wants to go	24	18
4 - no - he has acquired skills / knows letters, numbers	17	6
5 - no - social-emotional traits / adjusts easily, quiet	14	25
6 - no - intellectual traits / clever, understands	10	10

	exp. (%)	control (%)
4. <u>The way you see x today, do you think he will be a good student? Why?</u>		
0 - no	4	4
1 - can't make judgement	19	25
2 - yes: social-emotional traits / obedient, doesn't hit	6	13
3 - yes: he wants to go to school	23	8
4 - yes: he has skills / writes; counts	2	4
5 - yes: intellectual traits / curious, has a good memory, is able to concentrate	39	38
6 - combination of two categories from 2 to 5	8	8
5. <u>Do you think he will be better or worse than his siblings? Why?</u>		
0 - worse; as bad as they are	9	14
1 - can't make judgement / it is too early; don't know	18	20
2 - the same - O.K. or good	20	11
3 - better - with no reason; or a social-emotional trait	15	26
4 - better - because he wants to; an intellectual trait / he had preparation; clever	38	29

Project Comments

No specific questions about the project were asked which would serve as a direct index of how the families felt. However, spontaneous comments relating to the program were made by the parents as part of their answers to the interview questions. These were extracted from the protocols and recorded as a unit. In this way, all references could be reviewed for each parent and over families. The 52 mothers made a total of 175 comments on the program which appeared in 26 of the 147 questions analysed; the 45 fathers made 110 comments in 23 of their 123 questions. Appendix II presents the distribution of these responses, question by question for both mothers and fathers and by couples.

The references to the project can be divided into three categories: 1) neutral, 2) positive, 3) negative. In the neutral category are included all those responses which referred to the fact that an aid had visited the home and had brought learning materials or that the parent had taught the child. No affective statement about the value of the project is offered.

Examples: 1. A teacher came every week and brought documents.

2. The aid brought him books

3. We did lessons together.

In contrast, the positive statements focus upon the value of the curriculum itself or its impact upon the child or the mother. A clear and enthusiastic position about the project is stated.

Examples: 1. My daughter succeeded and got a good report

2. There was a program from the University. He learned from it more than he did in kindergarten.

3. She got lessons that even in the 2nd or 3rd grade they don't get to.

4. There is a woman who comes and explains to me and I learn with her - it helps a lot.

Only one negative statement was made over all the interviews.

The quantity and quality of the comments differed considerably from family to family. The number of comments ranged between 0 - 12, with a mode of approximately 5. Two couples plus four additional fathers made no reference to the project whatsoever. In 19% of the families both parents made at least one positive remark. In approximately 65% of the families either the father or the mother made at least one positive comment. A surprisingly large percentage of the positive comments came from the fathers.

Effects on Other Variables

No consistent differences between the I and C group were observed on the remaining performance and attitude variables. However, the data did suggest some issues which may be relevant to the long-range effects of the program upon the parents.

HIPPY supplied its families with a variety of educational materials - from pencils and paper to games and books. One of the important effects that one might hope for as a result of exposure to these kinds of learning supplies is that the parents would learn to value them and be stimulated to purchase them on their own.

Only one question related directly to the parents' attitude toward learning supplies: "Do you think it is worthwhile to give a child toys - why?" We note a slight difference between the I and C mothers on this item. 41% of the I mothers vs. 29% of the C mothers, said that is important to give the child toys "because he learns from them".

However, when we inspect the data in the Performance Variable, "Learning Supplies Available for the Child", we see that there is no evidence of parental initiative to purchase these materials. The I children were equal to and in some cases lower than the C children in the amount and variety of learning supplies available to them in the home provided by the parents. They had the same amount of toys and books and even fewer didactic games (36% I vs. 50% C have more than 3 games).

It may be argued that there is no reason to expect parents whose funds are limited to buy materials when they are getting them free, that the impact on parental initiative can only be determined when the project leaves the home. On the other hand, consideration should be given to the implications of creating a dependency upon an outside source. The analysis of the data in this study has indicated that these parents did not readily internalise or transfer to new behaviors. It may be necessary to activate parents during the intervention so that the dependency does not become habitualised.

Another important set of long range effects that a home intervention program might be interested in encouraging is positive parental attitudes toward, and increased knowledge of and contact with the formal educational institutions.

Most of the parents in both the I and C groups did value the kindergarten (Variable 18) and thought that their child had benefited in one way or another from the experience. The mothers also visited the kindergarten and discussed their child with the teacher (Variable 13) quite regularly. Surprisingly, however, a significantly greater number of C mothers were able to report what the children do during the day in the kindergarten ($x^2 = 6.91$, DF = 2, P = .05): 12% of the I mothers vs. 3% of the C mothers could give no information at all; 73% of the I vs. 62% of the C mothers reported general activities; 15% of the

I vs. 35% of the C mothers reported at a detailed level of specificity and evidenced a good knowledge of the daily schedule of activities in the kindergarten.

It may be that the direct and more powerful influence of the project distracted the mothers' attention from what was going on in the kindergarten and focused it upon the intervention activities. The strongest evidence of this focus was obtained when the mothers were asked to show the interviewers pictures or handiwork done by the child in the kindergarten. At least 28% of the I mothers brought out the child's HIPPY file and reported with enthusiasm on the existence of the project. Some of them said that they throw away the things from the kindergarten but keep the HIPPY materials. This emphasis on the project repeats itself when asked what the child learned in kindergarten or how he has changed since he has been in the kindergarten. Some of the parents believed that there was a direct connection between the kindergarten and the project, that the intervention was a extension of the kindergarten activities.

It seems that it is necessary to help the parents understand the particular value of the intervention and the kindergarten, the relationship of the two programs to each other and their interactive impact upon the child. This effort might reinforce the committment to the program and at the same time create a stronger interest in the educational institution.

CONCLUSIONS AND RECOMMENDATIONS

The data indicate that the program had some impact on the mothers, but the effect was not as great as had been hoped. Furthermore, changes did not occur in areas which may be essential for her to fulfill the role of educator after the intervention has ended. There was no appreciable impact on the mother's view of herself as an educator and on her confidence that she could be of help or find help for her child in his school learning. A closer investigation of the HIPPY operation revealed a possible explanation for the above findings. In an effort to prevent confusion and misunderstandings concerning the use of the materials on the part of the mothers, the HIPPY team decided to use a programmed instruction format. That is, the sequence of instruction - the lesson structure - was laid out in detail and the role of the mother was essentially that of an administrator of the learning materials. In addition, there was little opportunity for her to communicate with others besides the paraprofessional about the significance of the program, her reactions or problems, the child's reactions, etc. Her role was routine and unvaried and she was not helped to relate the experience to a broader attitudinal or behavioral framework. Since she did not play the role of initiator and decision maker in the learning situation, it is not surprising that there was little effect on her view of herself as an educator, and on her confidence in her ability to help the child in school.

It is felt that in order to increase the mother's confidence and awareness of herself as an educator and extend her role or change basic attitudes, it may be necessary for her to play the role of educator in the fullest sense of the word. This presents a dilemma for the HIPPY team. On the one hand their

immediate goal is to increase the intellectual functioning of the child using the mother as intermediary. In terms of this goal the use of highly structured materials and instructions was correct considering the low educational level of the mothers. On the other hand, changing the mother to a point where she can take over where the project leaves off requires a higher level of involvement on her part. In order to bring her to this level, the project must invest much more in the development of the mothers in their teaching roles. Behavioral attitudinal outcomes must be well defined and specific attempts made to achieve them. Therefore, if both goals of the project are to be met - raising the intellectual functioning of the child and maintaining it through the increased role of the mother as educator - then some middle ground must be found where the project actively attempts to increase the mother's initiative in the teaching role but maintains its effectiveness in educating the child.

APPENDIX I

A/ PERFORMANCE VARIABLES

1. Opportunities for learning provided by the mother (11 questions)
2. Reading and telling of stories by the mother (6 questions)
3. Mother as communicator-educator (9 questions)
4. Control strategies (5 questions)
5. Teaching techniques (9 questions)
6. Learning supplies provided for child (8 questions)
7. General learning supplies available in home (7 questions)
8. Child's daily schedule (4 questions)
9. Opportunity for interaction with family members in routine situations (7 questions)
10. Meal-time communication (5 questions)
11. Family activities: Saturday and trips (3 questions)
12. Mother's involvement in formal instruction (4 questions)
13. Mother's contact with the kindergarten (3 questions)
14. Mother as a model (6 questions)

B/ ATTITUDE VARIABLES

15. Aspirations for the child's future education (5 questions)
16. Vocational aspirations for the child (3 questions)
17. Value of the kindergarten experience (4 questions)
18. Expectations for the child's success in first grade (5 questions)
19. Attitudes towards learning opportunities (5 questions)
20. Parental expectancies - developmental timetable (7 questions)

APPENDIX II

Parents' References to HIPPY

Variable	Questions	No. of Responses M	F	M & F
Learning Supplies Available for child	1. From whom did he get his books?	46	30	27
	2. From whom did he get his toys?	-	14	-
	3. Does he have pencils, paper, etc.?	6	1	
	4. Does he have games?	5		
	5. From whom did he get his games?	2	1	
Learning Opportunities	1. What do you do with the handwork he brings from kindergarten?	15	1	
	2. Do you let him do such things at home?	6	5	1
	3. What do you do together in the afternoon?	12	1	
Reading and Telling Stories	1. Do you read him stories?	2	2	
	2. Since when have you been reading him stories?	2	1	
	3. How often do you tell him stories?		2	
Expectations for Child's Success in First Grade	1. What is there about him that you think will help him in first grade?	6	3	
	2. Do you think it will be difficult for him to get used to school?	4	3	
	3. Do you think he'll be a good pupil?	3	3	
	4. Do you think he'll be a better pupil than his brothers?	4	1	1

Variable	Questions	No. of Responses M	F	M & F
Parents' Involvement in Formal Instruction	1. Who taught him to open book, etc.?	18	18	10
	2. Soon he will be going to school, have you done anything at home that will help him?	20	3	2
	3. Will you be able to help him in first grade?	1		
	4. If he finds it difficult in first grade, what will you do?	2		
Attitudes Toward Kindergarten Experience	1. What did he learn in kindergarten?	8	6	3
	2. How has he changed since going to kindergarten?	4	7	
	3. Is it worth sending a child to kindergarten?	1		
Miscellaneous	1. Does anyone else tell him stories?	5	1	
	2. What does he do in the afternoon?		4	
	3. What does he do after supper?	1		
	4. What do you do on Saturday?	1		
	5. What do you do when he asks a question you can't answer?	1		
	6. What did you talk about at breakfast this morning?	1	1	
	7. What do the children do in kindergarten?		1	
	8. What kind of a child is he?	1	1	

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